



THE BREEDING PERIOD AND EARLY PREGNANCY

The pre-breeding period is a great time to make sure your ewes and rams are as fit and healthy as possible, which will go a long way to minimising stress and problems during the busy lambing period.

BEFORE BREEDING

Pre-breeding is a key time period to ensure the ewes and rams are healthy and fit for the next breeding season. The benefits of planning for pregnancy are numerous:

- Minimise barren rates
- Compact lambing period
- Ensure successful first breeding season for hogs / gimmers
- Reduce risk of lamb losses due to infectious abortion, low birth weights or poor lamb vigour
- Reduce risk of ewe losses
- Achieve a healthy, less stressful lambing period!

Planning for breeding starts at weaning time. Remove cull ewes after weaning – check body condition score (BCS) a month after weaning: if ewes are thin compared with the rest of the group, consider why. There are many reasons for ewes losing weight including poor dentition, lameness, fluke, Johne's disease, OPA and Maedi Visna so discuss further diagnostics with your vet to guide your management decisions.

Get ewes in the right body condition score for breeding (see the AHDB Manual *Managing Ewes for Better Returns*⁵ to determine what is correct for your flock type). Remember it takes 6-8 weeks to improve one BCS on good grazing, so this needs to be prioritised from weaning onwards if ewes are lean. Ensure they're on continual fresh pasture for 10 days before and after the rams go in, as ewe undernutrition in the pre-breeding and early pregnancy (<50 d) period can lead to reduced ovulations, poor conception, resorption, foetal ovarian development and reduced lifetime fertility of ewe lambs. Overall, having ewes in good BCS throughout pregnancy will mean a higher lambing percentage, fewer barren ewes, fewer dead ewes and a more compact lambing period¹. See the QMS *Ewe Nutrition Timeline* for further information on feeding for success².

If you're breeding ewe lambs, select them from well-grown twins and aim for 60% of mature body weight at mating, e.g. for an 80 kg mule flock, ewe lambs mated at 48 kg. If breeding gimmers (shearlings, hogs) aim for 80% of mature body weight at mating.

PLAN AHEAD TO PREVENT ABORTION

Infectious abortion is a significant cause of lamb loss between tupping



and lambing. Effective vaccines are available to reduce the risk of abortion due to toxoplasmosis and *Chlamydophila abortus* (EAE), but vaccines must be administered well in advance of tupping, so some planning is required.

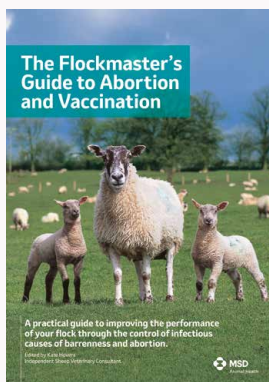


Enzootic abortion (EAE, OEA, chlamydial abortion, kebbing) is caused by a bacterial-type organism, *Chlamydophila abortus*. Disease is widespread all over the UK, so all flocks that buy in females that are not accredited EAE-free are at risk. Animals that appear outwardly healthy can be carriers of EAE. EAE typically causes abortion 3 weeks before lambing which may manifest as 'abortion storms' if many sheep are infected. The aborting ewes also spread disease at lambing time, so that more ewes and lambs pick up the disease when they're lambing and will abort themselves in their next pregnancy. Prevention is better than dealing with outbreaks and pre-breeding vaccination will help prevent disease which can lead to empty ewes, abortion and still births. Revaccination is recommended every 3-4 years depending on farm management and conditions.

Toxoplasma gondii is the world's most common parasite and >60%⁶ of sheep flocks in GB are exposed, according to data from the MSD FlockCheck blood sampling scheme, which tests 1,000s of ewes yearly. If the farm had >2% barren, aborted, or weak / sickly lambs during the last lambing season, ask your vet to investigate. The sheer volume of infectious oocysts produced by the parasite and their resistance to destruction leads to widespread environmental contamination. Sheep are very vulnerable to picking up the *Toxoplasma* parasite from the environment, so normal biosecurity measures are not enough to control the disease. Fortunately, toxoplasmosis can be controlled effectively by a simple vaccination regime. Vaccination is licensed to reduce the effects of infection with *Toxoplasma gondii*, namely early embryonic death, barrenness and abortion. The clear industry advice is that every ewe should have been vaccinated before breeding. All breeding females should be vaccinated 4 months to 3 weeks before breeding. Vaccination is known to protect for at least two lambing seasons along with correct hygiene and biosecurity measures.

Vaccination with Enzovax and Toxovax can be done at the same time, at different injection sites, 4 months to 4 weeks prior to breeding.

See the MSD Animal Health Flockmaster's Guide to abortion for more information on managing infectious abortion in your flock³ or discuss with your vet.



PLAN FOR GOOD RAM FERTILITY

Performing an MOT on all your rams at least 8 weeks pre-breeding will identify the vast majority of problems. Condition is very important – they'll be working hard during breeding and need to be fit (BCS 3.5-4) to cope with this. They may need supplementary concentrate to reach adequate condition score – avoid high levels of magnesium which can cause urinary stones. Your vet will give them a good physical exam to check there are no issues which might inhibit their performance, such as tooth abscesses, foot or leg problems, brisket sores and fighting wounds.

A physical examination of the testicles will identify many of the problems which can reduce ram performance. The vet may also collect a semen sample depending on whether there are any concerns, or he is required for a single sire group. Testes size and sperm production are highly responsive to nutrition. It takes 7 weeks to produce sperm so there needs to be an improvement in the ram's nutrition for at least 7 weeks pre-tupping to improve sperm numbers⁷.

Remember to include rams in all your routine treatment regimes: it's surprising how often they get forgotten about! Make sure they're monitored and treated if necessary, for fluke, worms, ectoparasites, clostridial and *Pasteurella* disease. Monitor for lameness throughout the year – rams which are painful on their feet will cover far fewer ewes, and longstanding lameness can be difficult to treat. Consider vaccination where lameness is a problem on the farm, although avoid vaccination in rams within 6 weeks of breeding. After the breeding period, rams may need supplementary feeding to regain BCS.

THE BREEDING PERIOD

Teaser rams can be used prior to breeding to ensure ewes are cycling before the rams go out. Ewes respond to the pheromones given off by the teasers and should be well-synchronised in response.

Ensure the ram:ewe ratio is appropriate – mature rams that have passed their MOT and are in good condition should be easily capable of serving up to 80 ewes. Ram-lambs can manage around 40 but monitor libido. Ensure a good plane of nutrition is available throughout breeding without any sudden changes. Keep a close eye on your rams to ensure they're working, and to diagnose and treat any problems promptly. As they lose condition through the breeding period, raddles may need to



be adjusted. This is often easy to do in the field if rams are trained to bucket-feed prior to breeding. Keeping harnesses in good condition between tupping periods will minimise rubbing and resultant sores which can make rams reluctant to mount ewes. Change raddle colours every 10 days to detect returns, moving from light to dark colours so repeats can be seen. If lambing shed space is tight, it may be necessary to identify groups to house as lambing progresses, otherwise raddles can be left off for the first 10 days and any ewes not marked assumed to be in the first group.

EARLY PREGNANCY

Throughout pregnancy, the adult flock should be fed to maintain their BCS. Avoid abrupt changes in diet, keep ewe lambs separate and feed for growth (+20%). To avoid early embryonic death (EED), avoid unnecessary disruption and stress such as gathering with dogs, and keep handling to a minimum. Underfeeding in pregnancy will risk EED, as well as poor placental development and poor lamb development, growth and health. Some key trace elements can really affect the early pregnancy. Cobalt, through its effect on vitamin B12 supply, is a key nutrient during oocyte development and for the early foetus. Trials at the SRUC⁴ have shown that lambs from cobalt-deficient ewes in early pregnancy are slower to suck and interact less with their dams after birth. Where selenium levels are low, supplementation before tupping leads to significant improvements in reduction in barrenness and lambs born. Lambs are livelier and 0.6 kg heavier at weaning than lambs from deficient ewes.

SCANNING

Scanning of ewes at around 90 days is an important measure to enable appropriate nutritional management in late pregnancy. AHDB advises a maximum barren rate of 2% for ewes in all systems (lowland, upland, hill), and 20% for ewe lambs⁵. If rates are higher than this, investigation with your vet would be indicated.

REFERENCES

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3. MSD Flockmaster's Guide to abortion: https://www.msd-animal-health-hub.co.uk/sites/default/files/content/media/104180_flockmasters_guide_a5_v2020.pdf
4. SRUC (formerly SAC) Year Round Feeding the Ewe for Lifetime Production: <http://www.eblex.org.uk/wp/wp-content/uploads/2013/06/Booklet-Year-Round-Feeding-the-Ewe-for-Lifetime-Production.pdf>
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6. MSD FlockCheck sampling scheme data, 2021
7. SVS Guidelines on the examination of rams for breeding

Enzovax® contains *Chlamydophila abortus* strain ts 1B. Legal category **POM-V**.
Toxovax® contains *Toxoplasma gondii*. Legal category **POM-V**.

Further information is available from the SPC, datasheet or package leaflet.
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Advice should be sought from the medicine prescriber.
Prescription decisions are for the person issuing the prescription alone.
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